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DIXON<sup>19</sup> has published a report on the mosses of the Dümmer-Maclennan Expedition to Mount Elgon in 1918, and also on a small collection from the Aberdale Mountains. In the larger collection 46 species are reported, representing 32 genera. Ten new species, in as many genera, are reported for the smaller collection, and a new genus is established (*Kleioweisiopsis*) in Pottiaceae.

LANGE,<sup>20</sup> in his third part of the Agarics of Denmark, presents *Pluteus* (15 spp.), *Collybia* (28 spp.), and *Inocybe*. (47 spp.). Only 4 new species are described (in *Inocybe*), but there are many transfers, based upon new conceptions of species and genera.

SETCHELL and GARDNER<sup>21</sup> have described 16 new species of marine algae, distributed among 9 genera, one of which (*Internoretia*) is new. It is an endophyte, "growing within the membranes of *Porphyra Naiadum*." The same authors,<sup>22</sup> in the second part of their monograph of the marine algae of the Pacific Coast, have published the Chlorophyceae. The analytical keys, full descriptions, excellent illustrations, and complete bibliography, present the group in a most satisfactory way. The group is represented by 6 orders, 13 families, 34 genera, and 136 species. The largest genera are *Cladophora* (17 spp.), *Enteromorpha* (16 spp.), and *Ulva* (13 spp.).

BØRGESSEN<sup>23</sup> has issued the third and fourth parts of his "Marine algae of the Danish West Indies," which continue the presentation of the Rhodophyceae. The two parts include 75 species, two of which are new, distributed among 29 genera. *Mesothamnion* is established as a new genus of the Ceramiaceae.—J.M.C.

**Ovules and seeds of Thymeleaceae.**—GUÉRIN<sup>24</sup> has investigated the anatomical structure of the ovule and seed of 27 genera of the Thymeleaceae. In the ovule the entrance to the micropyle is obstructed more or less by elongated cells which arise from the base of the stylar canal and become many-celled hairs. In some genera these cells are massed together and constitute a kind of obturator, which does not seem to hinder the penetration of the pollen

<sup>19</sup> DIXON, H. N., Reports upon two collections of mosses from British East Africa. Smithsonian. Miscell. Coll. 72: no. 3. pp. 20. pls. 2. 1920.

<sup>20</sup> LANGE, JAKOB E., Studies in the Agarics of Denmark. III. Dansk Botanisk Arkiv 2:1-47. pls. 1-3. 1917.

<sup>21</sup> SETCHELL, W. A., and GARDNER, N. L., Phycological contributions. 1. Univ. Calif. Publ. Bot. 7:279-324. pls. 21-31. 1920.

<sup>22</sup> ———, The marine algae of the Pacific Coast of North America. Part II. Chlorophyceae. Univ. Calif. Publ. Bot. 8:139-374. pls. 9-33. 1920.

<sup>23</sup> BØRGESSEN, F., The marine algae of the Danish West Indies. III and IV. Rhodophyceae (3 and 4). Dansk Botanisk Arkiv 3:145-240, 241-304. figs. 82 and 77. 1917 and 1918.

<sup>24</sup> GUÉRIN, PAUL, Recherches sur la structure anatomique de l'ovule et de la graine des Thyméléacées. Ann. Jard. Bot. Buitenzorg II. 14:1-35. 1915.

tube; in fact, in some genera these hairs seem to serve rather as a guide to the pollen tube. The fusion of the polar nuclei is tardy. The antipodals are always more than 3 in number, and in some genera very many more. The most striking feature of the ovule is the "hypostase" of VAN TIEGHEM, which is a clearly differentiated group of cells beneath the embryo sac, whose thin walls give the lignin reaction to stains. It occurs sometimes immediately beneath the embryo sac and sometimes deep in the chalaza. Its function is doubtful. The author raises the question whether it is not a distinct disadvantage in shutting off water conduction to the embryo sac.

In connection with seed development the author followed the changes in the tissues of the 2 integuments, finding that the inner integument contributes chiefly to the testa, but its persistent innermost layer separates from the testa and becomes a thin pellicle completely covering the embryo. In some of the genera in connection with seed formation, tracheae are developed in the periphery of the nucellus, connecting with the strands of the raphe and traversing the whole length of the nucellus. The author suggests that this is comparable to the tracheal nucellar mantle which characterizes the seeds of some of the Cycadofilicales. This feature has not been discovered before in the seeds of living plants.—J. M. C.

**Tree growth.**—MACDOUGAL<sup>25</sup> has issued a preliminary report describing briefly an instrument for recording the variations in diameter of tree trunks. Records extending over several months have now been made of individual trees of *Fraxinus arizonica*, *Pinus chihuahuana*, *P. radiata*, *Quercus agrifolia*, *Fagus grandifolia*, and *Platanus occidentalis*.

SHREVE<sup>26</sup> has added to these data a preliminary report of determination made on some stumps of *Pinus radiata*. The maximum increase in diameter for 10 years was 14 inches, while growth in height of 10 ft. for trees 12-15 inches in diameter has been known.—GEO. D. FULLER.

**A new atmometer.**—BATES<sup>27</sup> has devised a new atmometer which is said to have very nearly the same relation to wind and radiant energy as do the leaves of trees. A flat metallic chamber is constructed with a layer of moist linen between the upper and lower plates. The upper plate not only protects from rain, but also, possessing a blackened surface, absorbs radiant energy freely, while the lower plate is perforated to resemble the stomatal surface of leaves. Experiments have shown that the evaporation from this instrument follows the transpiration from small coniferous trees very closely.—GEO. D. FULLER.

<sup>25</sup> MACDOUGAL, D. T., The dendrograph. Carn. Inst. Wash. Year Book for 1919. 18:72-78. 1920.

<sup>26</sup> SHREVE, FORREST, Stem analysis and elongation in shoots of Monterey pine. Carn. Inst. Wash. Year Book for 1919. 18:88-89. 1920.

<sup>27</sup> BATES, C. G., A new evaporimeter for use in forest studies. Mo. Weather Rev. 47:283-294. figs. 3. 1919.